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Amdt. dated June 6, 2005
Reply to Office Action of February 4, 2005

PATENT

REMARKS/ARGUMENTS

Claims 1-57 are pending. Claims 1, 15, 24, 32, 33, 39, 43, 44, 50, 53, 54, and 56 have been amended. No new matter has been introduced. Applicants believe the claims comply with 35 U.S.C. § 112.

Claims 1-57 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Quake et al. (US 2002/0037499 A1).

Applicants respectfully submit that independent claim 1 is patentable over Quake et al. because, for instance, Quake et al. does not teach or suggest a first component symbol having associated property, wherein the associated property has at least one of physical scaling, physical property, layer assignment, and functional definition; and the physical property includes a physical dimension having depth information. For at least the foregoing reasons, claim 1 and claims 2-14 depending therefrom are patentable over Quake et al.

Applicants respectfully submit that independent claim 15 is patentable over Quake et al. because, for instance, Quake et al. does not teach or suggest placing a first symbol representing a first component of a plurality of microfluidic components on a schematic having a plurality of layers, wherein the first component comprises a first fluid channel symbol and a first control channel symbol, the first symbol has related functional information, and the first fluid channel symbol and the first control channel are on different layers of the plurality of layers. For at least the foregoing reasons, claim 15 and claims 16-23 depending therefrom are patentable over Quake et al.

Applicants respectfully submit that independent claim 24 is patentable over Quake et al. because, for instance, Quake et al. does not teach or suggest a microfluidic component library comprising functional information and symbols associated with the plurality of microfluidic components, wherein each of the symbols has associated property; wherein the associated property has at least one of physical scaling, physical property, layer assignment, and functional definition; and the physical property includes a physical dimension having depth

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information. For at least the foregoing reasons, claim 24 and claims 25-31 depending therefrom are patentable over Quake et al.

Applicants respectfully submit that independent claim 32 is patentable over Quake et al. because, for instance, Quake et al. does not teach or suggest code for placing a first symbol representing a first component of a plurality of microfluidic components on a schematic having a plurality of layers, wherein the first component comprises a first fluid channel symbol and a first control channel symbol, and the first fluid channel symbol and the first control channel are on different layers of the plurality of layers.

Applicants respectfully submit that independent claim 33 is patentable over Quake et al. because, for instance, Quake et al. does not teach or suggest selecting from a database, component models associated with the plurality of microfluidic components, the component models having layer information and channel depth information; and generating the network model by using the component models and the synthesis program, wherein the component models are connected together using the layer information and channel depth information. For at least the foregoing reasons, claim 33 and claims 34-38 depending therefrom are patentable over Quake et al.

Applicants respectfully submit that independent claim 39 is patentable over Quake et al. because, for instance, Quake et al. does not teach or suggest a design library comprising a plurality of indications associated with the plurality of microfluidic components, the plurality of indications having layer information and channel depth information, wherein selected indications of the plurality of indications are selected using the synthesis code; and a synthesis module for creating the schematic by connecting the selected indications using layer information and channel depth information associated with the selected indications. For at least the foregoing reasons, claim 39 and claims 40-42 depending therefrom are patentable over Quake et al.

Applicants respectfully submit that independent claim 43 is patentable over Quake et al. because, for instance, Quake et al. does not teach or suggest code for selecting from a database, software component models associated with the plurality of microfluidic

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components, the software component models having layer information and channel depth information; and code for generating the network model by using the software component models, including the layer information and channel depth information and the synthesis program, wherein the software component models are connected together.

Applicants respectfully submit that independent claim 44 is patentable over Quake et al. because, for instance, Quake et al. does not teach or suggest functionally simulating the schematic by using the functional model in the schematic and the logic control test sequence to show functional connectivity of the microfluidic circuit. Quake et al. discloses channels disposed in multiple layers, but does not suggest functionally simulating a schematic using the functional model and the logic control test sequence to show functional connectivity of the microfluidic circuit. For at least the foregoing reasons, claim 44 and claims 45-49 depending therefrom are patentable over Quake et al.

Applicants respectfully submit that independent claim 50 is patentable over Quake et al. because, for instance, Quake et al. does not teach or suggest a functional simulator for functionally simulating the schematic by using the functional model in the schematic and the logic control test sequence to show functional connectivity of the microfluidic circuit. For at least the foregoing reasons, claim 50 and claims 51-52 depending therefrom are patentable over Quake et al.

Applicants respectfully submit that independent claim 53 is patentable over Quake et al. because, for instance, Quake et al. does not teach or suggest code for functionally simulating the schematic by using the functional model in the schematic and the logic control test sequence to show functional connectivity of the microfluidic circuit.

Applicants respectfully submit that independent claim 54 is patentable over Quake et al. because, for instance, Quake et al. does not teach or suggest code for placing a first component symbol of the plurality of microfluidic component symbols on a schematic, wherein the first component symbol has associated property; wherein the associated property has at least one of physical scaling, physical property, layer assignment, and functional definition; and the

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physical property includes a physical dimension having depth information. For at least the foregoing reasons, claim 54 and claim 55 depending therefrom are patentable over Quake et al.
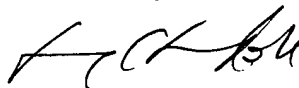
Applicants respectfully submit that independent claim 56 is patentable over Quake et al. because, for instance, Quake et al. does not teach or suggest a functional analysis module for functionally simulating selected multilayered symbols of the schematic to show functional connectivity thereof. Quake et al. discloses channels disposed in multiple layers, but does not suggest functionally simulating selected multilayered symbols of the schematic to show functional connectivity thereof. For at least the foregoing reasons, claim 56 and claim 57 depending therefrom are patentable over Quake et al.

CONCLUSION

In view of the foregoing, Applicants believe all claims now pending in this Application are in condition for allowance. The issuance of a formal Notice of Allowance at an early date is respectfully requested.

If the Examiner believes a telephone conference would expedite prosecution of this application, please telephone the undersigned at 650-326-2400.

Respectfully submitted,

Chun-Pok Leung
Reg. No. 41,405

TOWNSEND and TOWNSEND and CREW LLP
Two Embarcadero Center, Eighth Floor
San Francisco, California 94111-3834
Tel: 650-326-2400
Fax: 415-576-0300
RL:rl
60475767 v1